



# Stepping On

Building Confidence  
and Reducing Falls in Older Adults

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# How Significant is the Problem?

Cost of fall injuries among people 65+

Adjusted for inflation = \$30 billion

- Fatal falls: \$0.3 billion
- Nonfatal injuries: \$29.9 billion



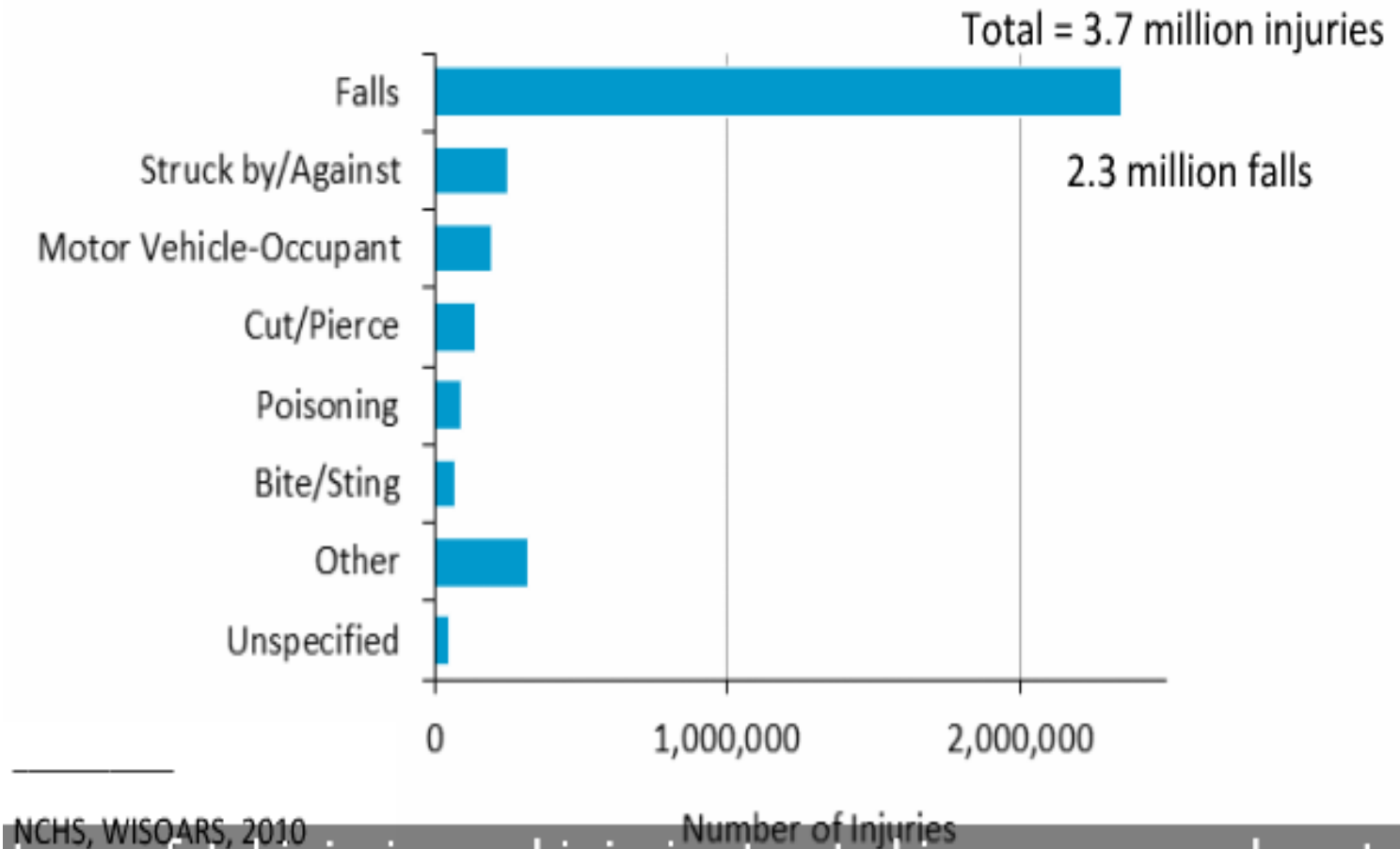
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Stevens JA, *Inj Prev*, 2006

- **1 out of every 3** people, 65 years & over fall each year
- By 2020 the cost of falls injuries are estimated to be **\$32.4 billion**.

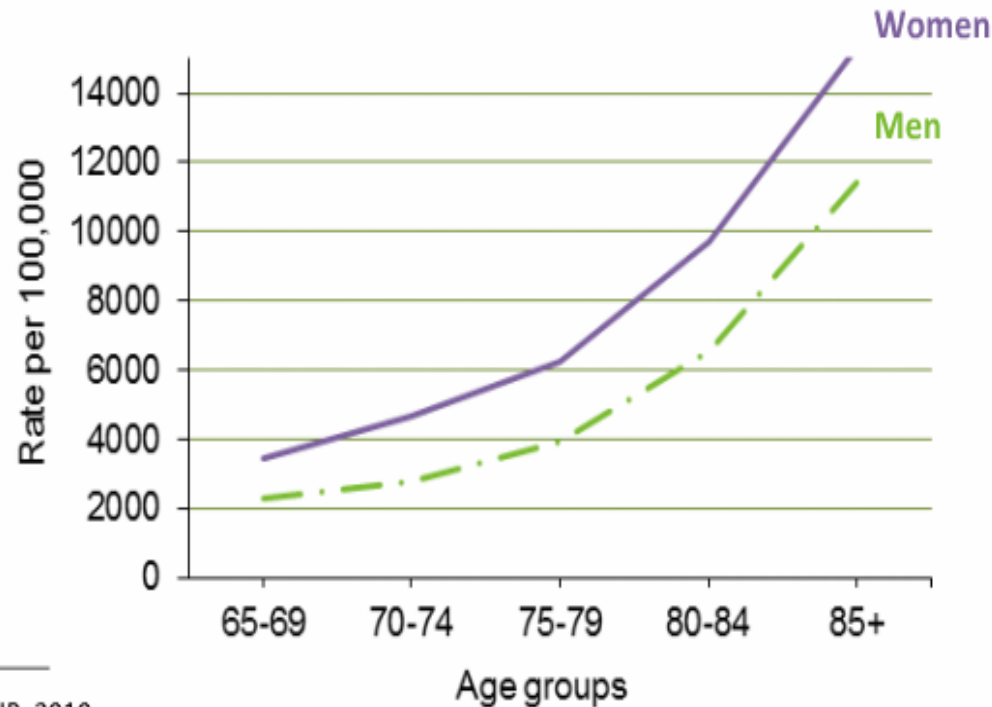
Source: CDC webinar on STEADI: April, 2013

# Leading Causes of Nonfatal Injuries Among People 65+, 2010



About a quarter of these patients needed to be hospitalized for their injuries!

## Nonfatal Fall Injury Rates by Sex & Age, 2010



NEISS-AIP, 2010

### **Why the difference between men and women?**

Men may have lower nonfatal fall injury rates due to better lower body strength, and women are more likely to have osteoporosis

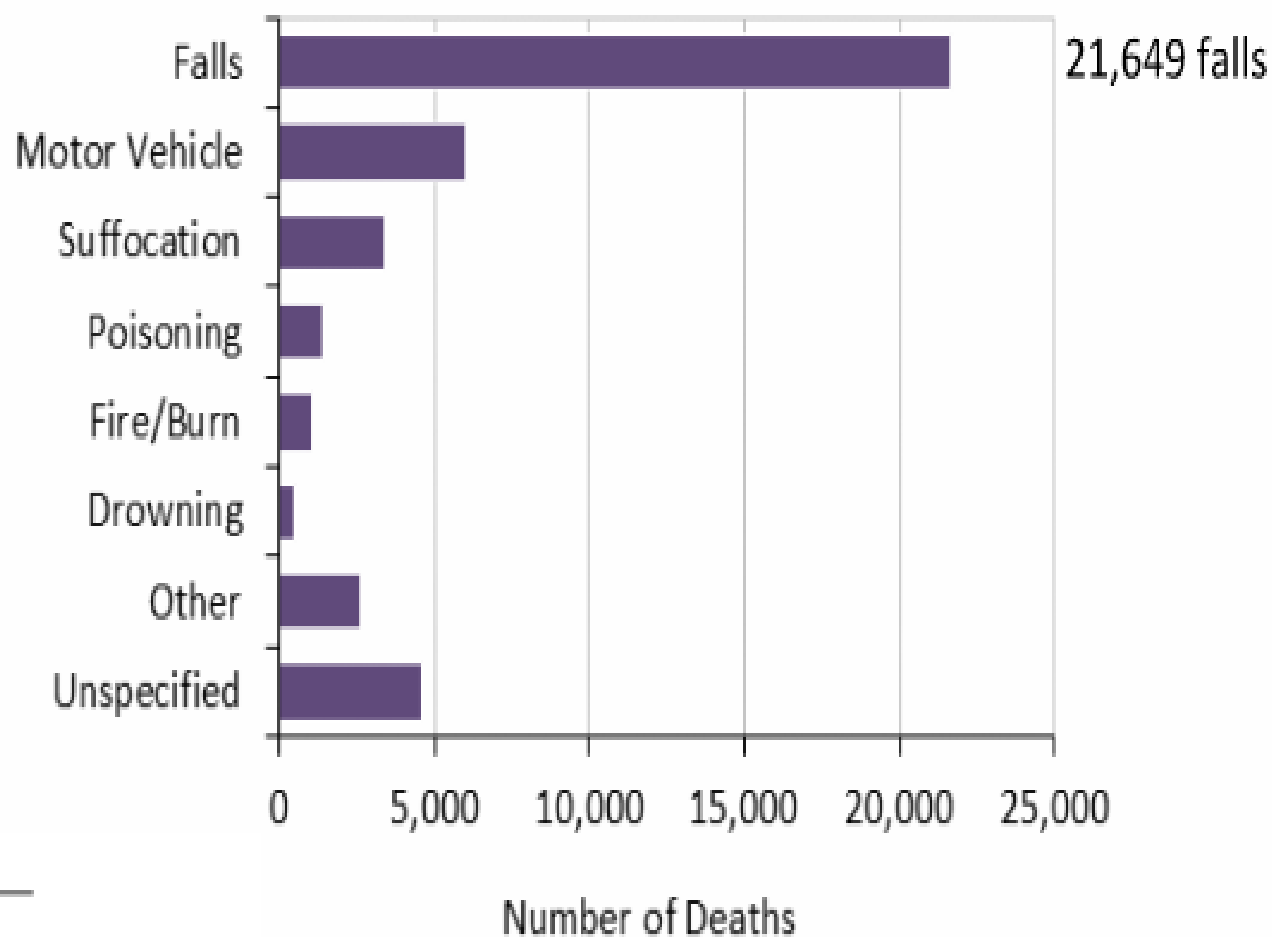
# **CDC – Outcomes Linked to Falls**

- Twenty percent to 30% of people who fall suffer moderate to severe injuries such as lacerations, hip fractures, or head traumas. These injuries can make it hard to get around or live independently, and increase the risk of early death.
- Falls are the most common cause of traumatic brain injuries, or TBI. In 2000, TBI accounted for 46% of fatal falls among older adults.
- Most fractures among older adults are caused by falls. The most common are fractures of the spine, hip, forearm, leg, ankle, pelvis, upper arm, and hand.
- Many people who fall, even if they are not injured, develop a fear of falling. This fear may cause them to limit their activities, leading to reduced mobility and loss of physical fitness, which in turn increases their actual risk of falling.

Source: CDC webinar on STEADI: April, 2013

# Leading Causes of Death from Injuries Among People 65+, 2010

Total = 41,300 deaths



# Iowa's Future Implication for Falls?

Today,  
**15.6%** of Iowa's population is  
65 or older

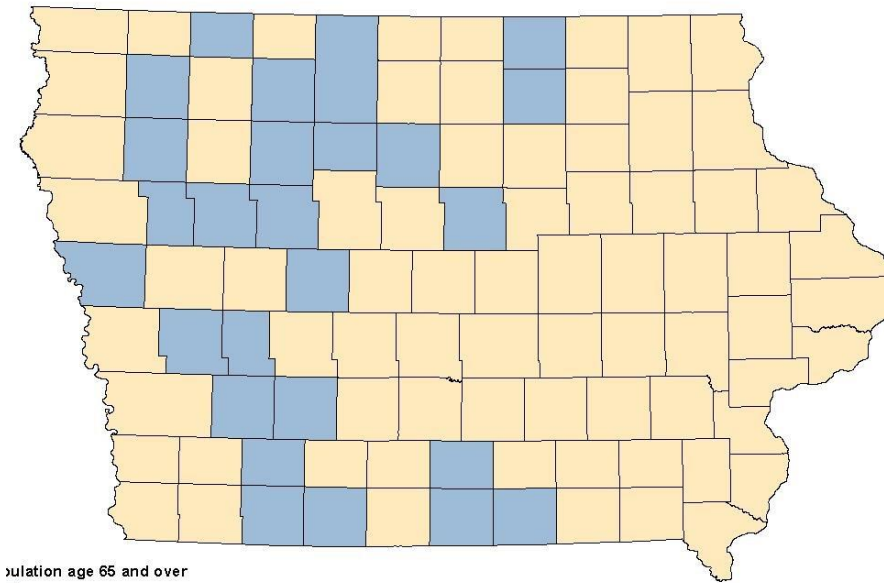


By 2030,  
**20.5%** of Iowa's population  
will be 65 or older

Sources:  
U.S. Census Bureau (2013)

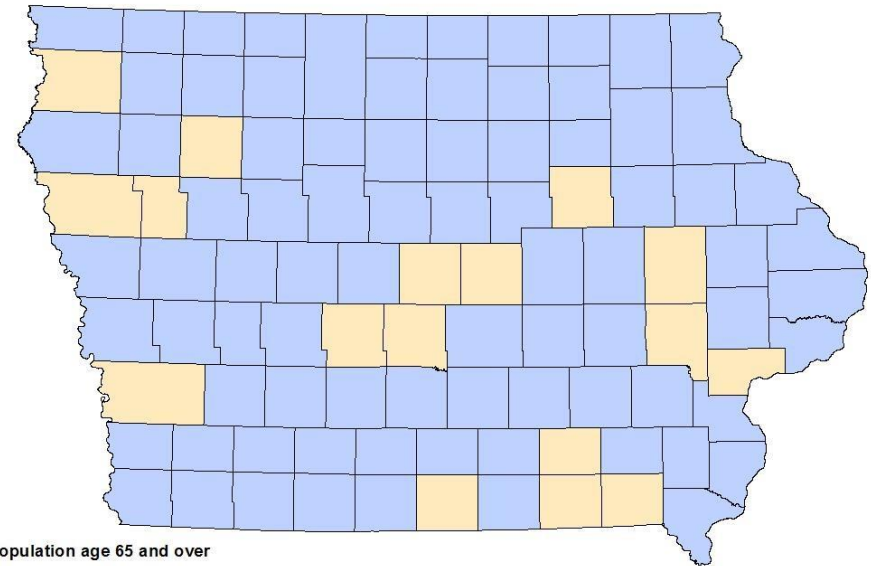
# Iowa, Age 65 and over

2010



Population age 65 and over

2040



Population age 65 and over

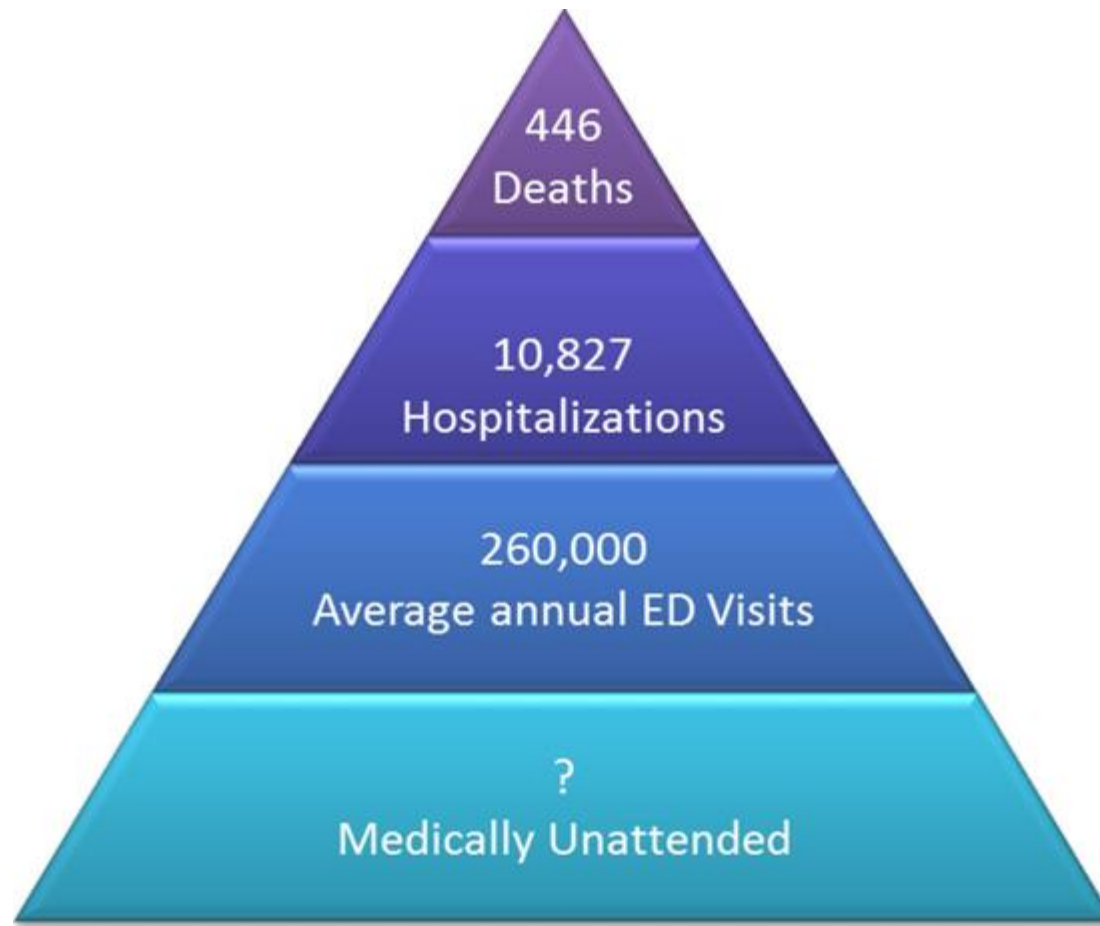
Less than 20%

Less than 20%  
20% or more





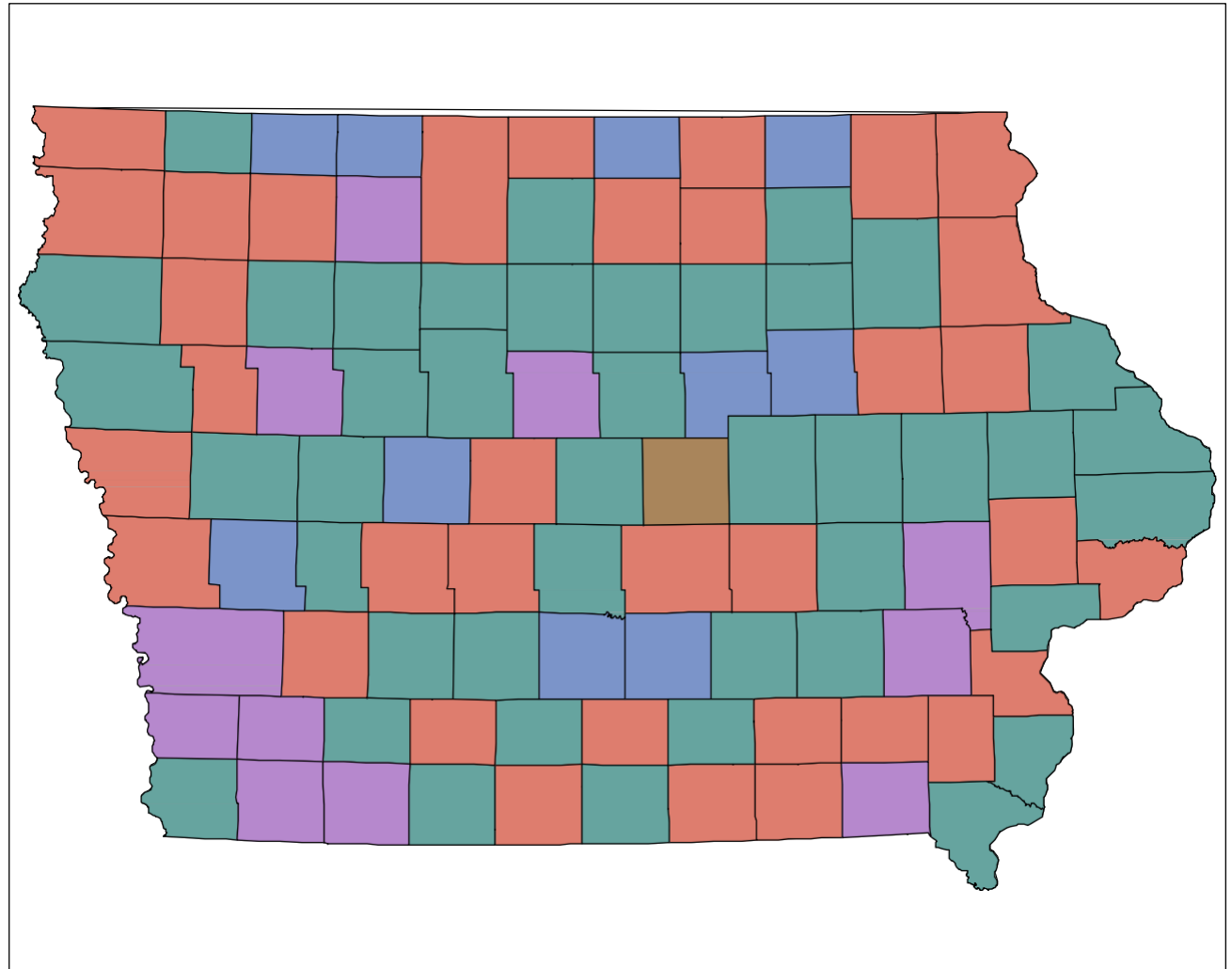
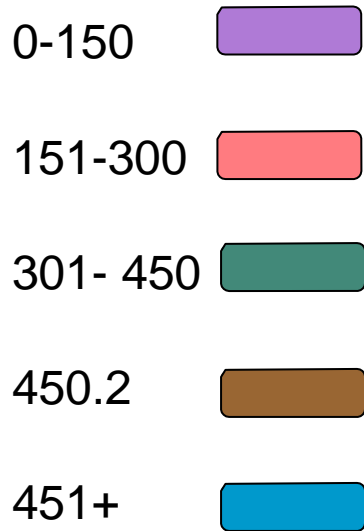
# Fall injuries that cause death in Iowa are only the tip of the injury iceberg



All ages, annual averages 2009- 2013

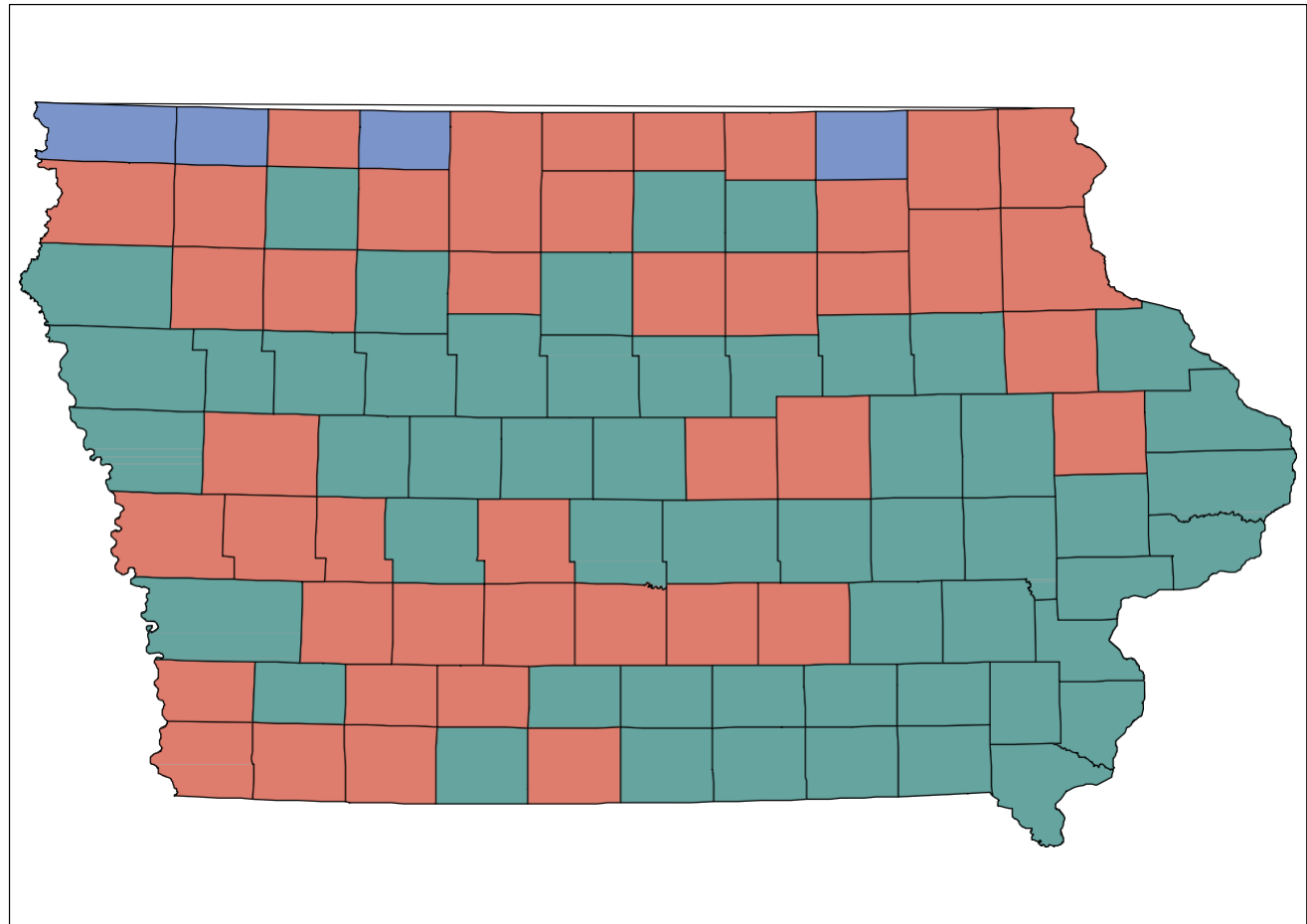
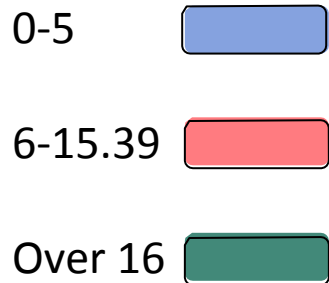
# Number of falls by county, 2013

## Residents aged 65 and older



# Falls related hospitalizations by county, 2009-2013 – Residents age 65 and older

Rate per  
1000,000  
residents, age  
65 and older



# Number of falls-related deaths by county, 2009-2013 Residents aged 65 and older

Rate per  
1000,000  
residents, age  
65 and older

0-25



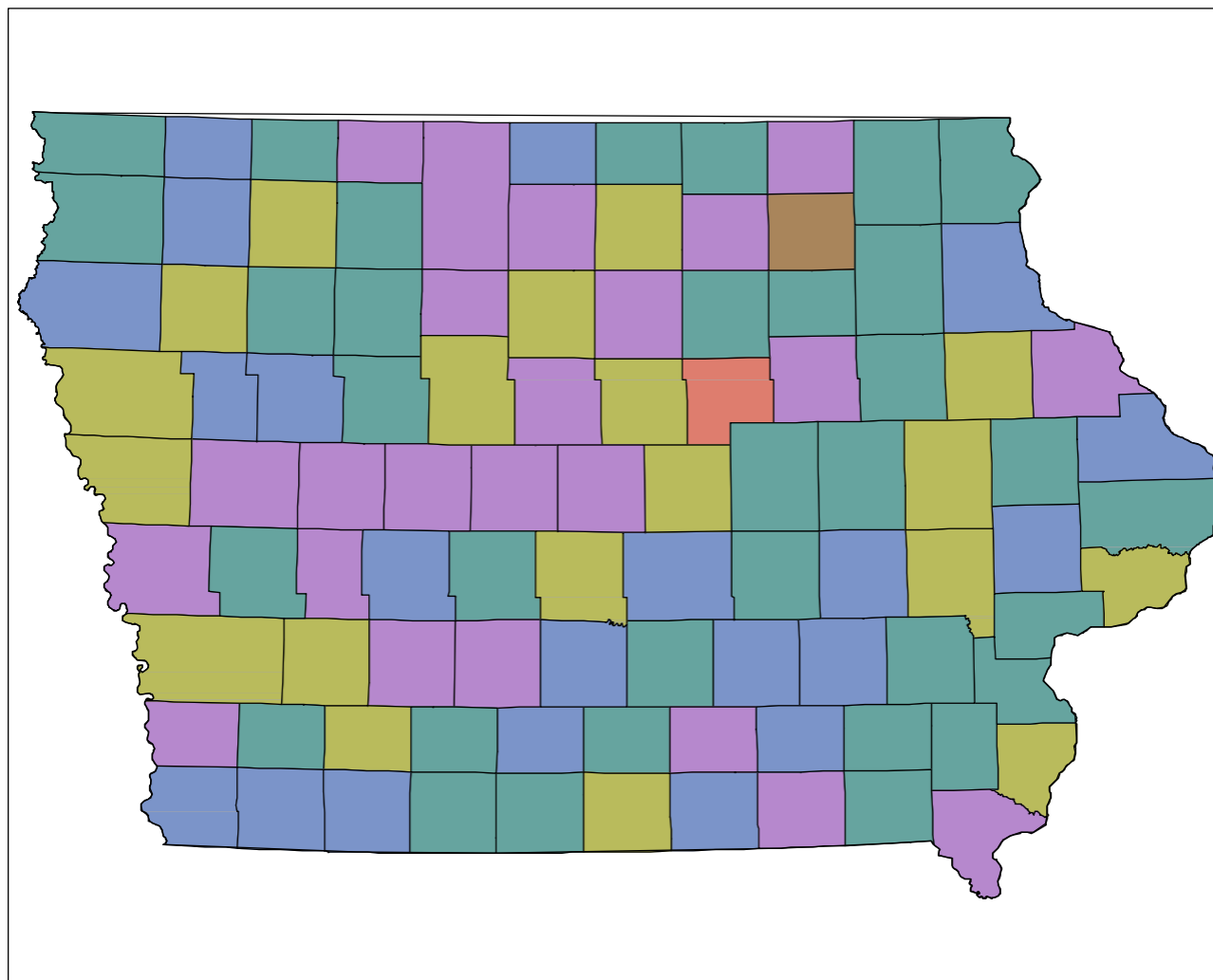
25.3



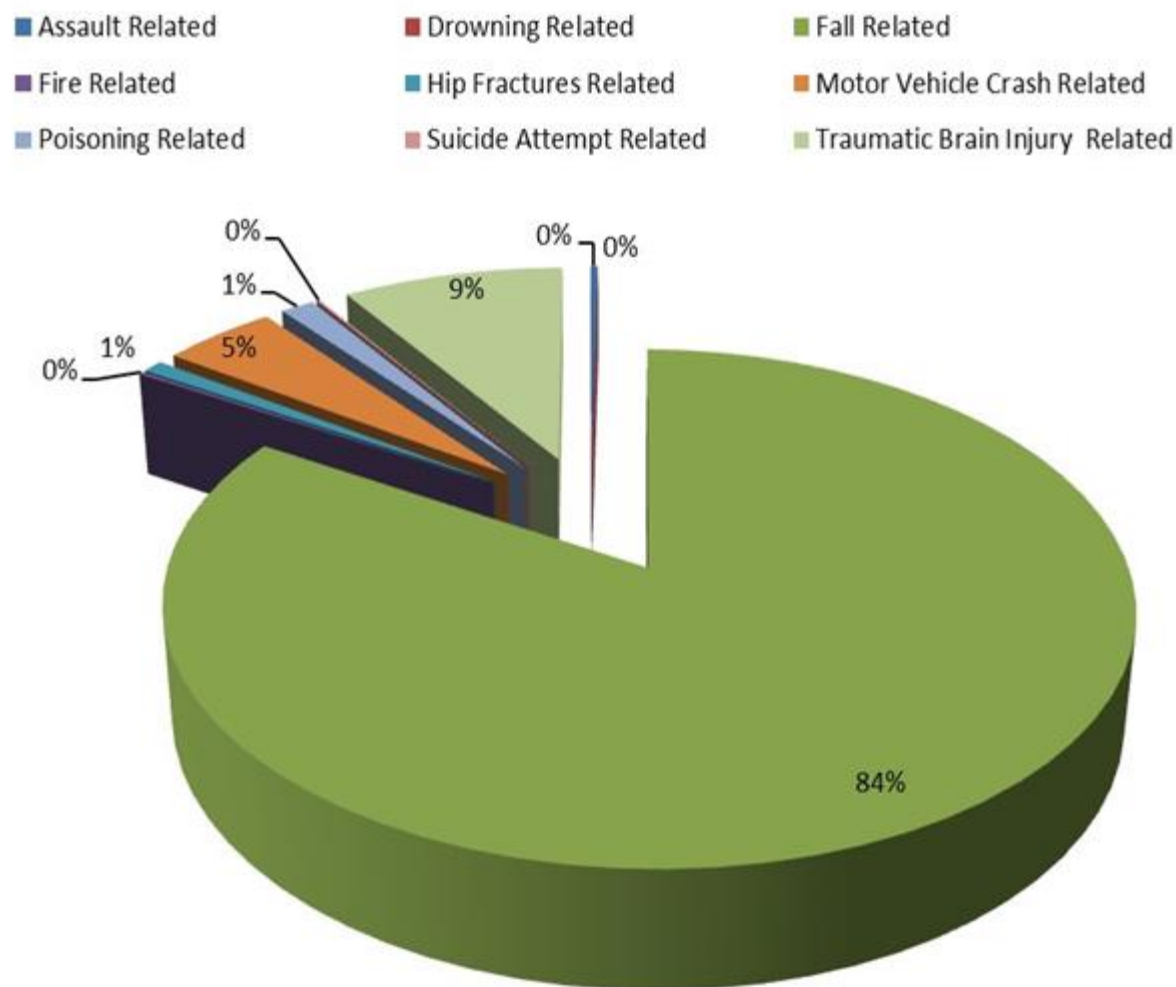
25-50



50.6



# Emergency Department Visits among residents aged 65+, 2013



# **Stepping On:**

## **A Group-Based Multifactorial Intervention**

*Clemson, JAGS, 2004*

- Developed in Australia by Dr. Lindy Clemson and Megan Swann, Occupational Therapists
- Participants were age 70+, fell in last year or had concern about falling, were community-dwelling older adults
- The Program:
  - 7 weekly sessions + 1 home visit + 1 booster session
  - Goal was to improve self-efficacy, encourage behavioral change, reduce falls
- Program was led by an Occupational Therapist
- Results showed a **31% reduction in falls**

## **Adherence at 14 Months After Completing Stepping On**

Program exercises	59%
Home visit recommendations	70%
More program subjects had a vision check up	p=0.002
No change in total medications taken	p=0.55
Program participants were less likely to start taking a new psychotropic drug	p=0.04

# **Where it Began:**

## **Wisconsin Experience with Stepping On**

- 2006 - Funding from Wisconsin Partnership Program to Kenosha County Division of Aging Services to disseminate Stepping On in 5 counties
  - Developed 2-1/2 day training program (now 3 days)
  - Added co-leader based on Chronic Disease Self Management Program, preferably an elderly peer leader who took the class and had benefit from it
  - Did not restrict to leaders with health professional degrees only, i.e. OT, PT, RN



# **Wisconsin Implementation – 2006 to Present**

- Programs integrated within Aging Network partners:
  - Aging and Disability Resource Centers
  - Senior Centers
  - Offices on Aging
  - Tribal Units
  - Congregate Nutrition Programs
  - Health Care Systems
  - Other partners: parish nurses, parks and rec depts.
- Manual and program content revised, leader training revised
- Stepping On now available in 13 states!

# **Results of Stepping On Dissemination in Wisconsin**

Five Years of Data Collection / Research showed:

- 35% decrease in falls pre-post (using initial, 6 month post and 12 month post surveys)
- Decrease of 22 Emergency Department visits due to falls (11.7% reduction)
- Translated to a savings of \$39,468

# **Settings Where Stepping On is Delivered**

- Senior center
- Library
- Hospital and clinic
- Congregate meal site
- Senior apartment complex
- Church meeting area
- Various community meeting areas/halls
- ADRC/aging unit

# **Implementation Structure**

## **Train the Trainer Model**

Faculty Trainer, Master Trainer = Health professional (OT, PT, RN, MD)

Leaders = any professional working with older adults

Peer Leaders = any older person 60+ who has completed the program, is comfortable sharing in a group setting and who believes that falls are preventable and benefited from the class.



# Stepping On Participant



The Stepping On Falls Prevention program is ideal for older adults who:

- Are at risk of falling for a number of reasons.
- Have had a fall in the past year, or have a fear of falling.
- Walk independently, may use a cane indoors or out, or a walker for outdoor use only
- Are cognitively intact
- Live in their own home or other independent living facility
- Are able to speak conversational English or the language in which the group is being facilitated.

# What is Stepping On?

- Small-group sessions of 2 hours each
- Balance and strength exercises each class – based on the Otago exercise program
- Discussion sessions with invited experts:
  - Starting exercise, getting out and about safely
    - **Physical therapist**
  - Environmental safety
    - **Police officer, or community safety expert**
  - Vision screens, coping with low vision
    - **Low vision expert**
  - Medication review
    - **Pharmacist**



## **Stepping On**

# **Stepping On - Overview of Sessions:**

- Building trust, risk appraisal, introduce balance and strength exercises
- Review exercises, moving about safely
- Home hazards
- Community safety and safe footwear
- Vision and falls
- Bone health
- Medication management
- Sleep alternatives
- Mobility mastery experiences
- Safe bus and train travel
- Home visit
- Booster session

# **Stepping On Program**

- Improving self-efficacy to change behavior by:
  - Telling stories
  - Discussion using prevention framework
  - Doing “homework”
  - Using multiple modalities to learn (videos, brainstorm, handouts, display table)
  - Personalizing information to accomplish personal goals



# **The Preventive Framework Adapted for Reflecting on Stories About Safety Strategies:**

1. Why did this work/not work and what are some other things that could work?
2. Which way works best for you?
3. How can you make this happen?
4. Are there any barriers to making it happen?
5. How can you keep this happening?



# **Balance and Strength Exercises**

- During the first two sessions, the physical therapist helps participants to learn all exercises
- Later sessions do sampling of exercises based on participants input
- Homework: balance and strength exercises are practiced at home and recorded. Balance exercises completed daily, strength exercises completed 3x/week.
- Progress the exercises as able during sessions and at home by increasing repetitions, adding weight, reducing support
- In each session, workshop facilitator leads a discussion on barriers and facilitators to implementing exercises at home

## Exercises at a glance

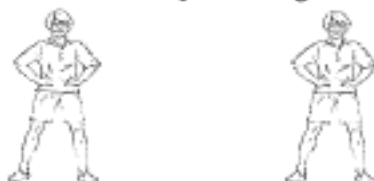
## BALANCE EXERCISES

For more specific instructions on advancing each exercise, refer back to the manual.

## Sit-to-stand



## Sideways walking



## Heel-toe (tandem) standing



## Heel-toe (tandem) walking



## Strength Exercises

For more specific instructions on advancing each exercise, refer back to the manual.

## Side-hip-strengthening



## Front-knee-strengthening



## Heel raises



## Toe raises



# Home Visit and Booster



- Not just a home safety check
- Individual follow-up
- Safety strategies
- Referrals
- Review exercises
- Remind about Booster Session



- Review progress
- What are you using-what have you changed
- Review and practice exercises
- Review Key Issues

## **Reference**

<https://wihealthyaging.org/background-information>

**Questions?**

Thank You!

